

Claims

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1. A method of managing the state of a computer network with redundant network connections, comprising:
 - determining the state of a primary network connection between each pair of networked nodes;
 - determining the state of a redundant network connection between each pair of networked nodes; and
 - selecting either the primary network connection or the redundant network connection for sending and receiving data between each pair of networked nodes, such that the network path selected to be used to communicate is selected independently based on the determined network states for each pair of networked nodes.
2. The method of claim 1, further comprising building a network status table that indicates results of determining the state of primary and redundant network connections between each pair of networked nodes.
3. The method of claim 2, wherein the network status table comprises data representing network status based on data received at a node from other network nodes.

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4. The method of claim 3, wherein the data received at a node from other networked nodes comprises a diagnostic message.
5. The method of claim 4, wherein the data received at a node from other networked nodes comprises data representing the ability of the other nodes to receive data from other different network nodes.
6. The method of claim 2, wherein the network status table comprises data representing network status based on a node's ability to send data to other nodes.
7. The method of claim 3, wherein the network status table further comprises data representing network status based on a node's ability to send data to other nodes.
8. The method of claim 1, wherein selecting the primary or redundant network connection for communication between each pair of networked nodes comprises:
 - selecting the primary network connection if the state of the primary network connection is determined to be operable; and
 - selecting the redundant network connection if the state of the primary network connection is determined to be inoperable.
9. The method of claim 1, wherein selecting the primary or redundant network connection for communication between each pair of networked nodes comprises:

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selecting the primary network connection to transmit data if the state of the primary network connection is determined to be operable to transmit data;

selecting the primary network connection to receive data if the state of the primary network connection is determined to be operable to receive data;

selecting the redundant network connection to transmit data if the state of the primary network connection is determined to be inoperable to transmit data; and

selecting the redundant network connection to receive data if the state of the primary network connection is determined to be inoperable to receive data.

10. The method of claim 1, wherein selecting a connection for sending and receiving data between each pair of network nodes comprises selecting a connection for sending and receiving data from a first node to one or more connected intermediate nodes, and selecting a connection for sending and receiving data from an intermediate node to a second node.

11. A computer network interface, the interface operable to:

determine the state of a primary network connection between the network interface and the network interfaces of other network nodes;

determine the state of a redundant network connection between the network interface and the network interfaces of other network nodes; and

select either the primary network connection or the redundant network connection for communication with each of the other network nodes, such that the

network connection selected is selected independently based on the determined network states for each other network node.

12. The computer network interface of claim 11, the interface further comprising a network status table that indicates results of the determination of the state of the primary and redundant network connections between the computer network interface and the network interfaces of other network nodes.

13. The computer network interface of claim 12, wherein the network status table comprises data representing network status based on data received at a node from other network nodes.

14. The computer network interface of claim 13, wherein the data received at a node from other networked nodes comprises a diagnostic message.

15. The computer network interface of claim 14, wherein the data received at a node from other networked nodes further comprises data representing the ability of the other nodes to receive data from other different network nodes.

16. The computer network interface of claim 12, wherein the network status table comprises data representing network status based on a node's ability to send data to other nodes.

17. The computer network interface of claim 13, wherein the network status table further comprises data representing network status based on a node's ability to send data to other nodes.

18. The computer network interface of claim 11, wherein selecting either the primary network connection or the redundant network connection for communication with each of the other network nodes comprises:

selecting the primary network connection if the state of the primary network connection is determined to be operable; and

selecting the redundant network connection if the state of the primary network connection is determined to be inoperable.

19. The computer network interface of claim 11, wherein selecting either the primary network connection or the redundant network connection for communication with each of the other network nodes comprises:

selecting the primary network connection to transmit data if the state of the primary network connection is determined to be operable to transmit data;

selecting the primary network connection to receive data if the state of the primary network connection is determined to be operable to receive data;

selecting the redundant network connection to transmit data if the state of the primary network connection is determined to be inoperable to transmit data; and

selecting the redundant network connection to receive data if the state of the primary network connection is determined to be inoperable to receive data.

20. The computer network interface of claim 11, wherein selecting a connection for sending and receiving data between each pair of network nodes comprises selecting a connection for sending and receiving data from a first node to one or more connected intermediate nodes, and selecting a connection for sending and receiving data from an intermediate node to a second node.

21. A machine-readable medium with instructions thereon, the instructions when executed on a computer operable to cause the computer to:

determine the state of a primary network connection between the network interface and the network interfaces of other network nodes;

determine the state of a redundant network connection between the network interface and the network interfaces of other network nodes; and

select either the primary network connection or the redundant network connection for communication with each of the other network nodes, such that the network connection selected is selected independently based on the determined network states for each other network node.

22. The machine-readable medium of claim 21, the instructions further operable to cause a computer to create and maintain a network status table that indicates results of

the determination of the state of the primary and redundant network connections between the computer network interface and the network interfaces of other network nodes.

23. The machine-readable medium of claim 22, wherein the created network status table comprises data representing network status based on data received at a node from other network nodes.

24. The machine-readable medium of claim 23, wherein the data received at a node from other networked nodes comprises a diagnostic message.

25. The machine-readable medium of claim 24, wherein the data received at a node from other networked nodes further comprises data representing the ability of the other nodes to receive data from other different network nodes.

26. The machine-readable medium of claim 22, wherein the created network status table comprises data representing network status based on a node's ability to send data to other nodes.

27. The machine-readable medium of claim 23, wherein the network status table further comprises data representing network status based on a node's ability to send data to other nodes.

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Figure 1